

WHAT IS CLAIMED IS:

1        1. A coke drum for a delayed coking unit, wherein said coke drum comprises:  
2              a substantially closed interior;  
3              a top portion of said drum having an aperture therethrough;  
4              an overhead vapor outlet nozzle connected to said aperture; and  
5              a deflector for deflecting solids and heavy hydrocarbon liquid from exiting said  
6              interior of said coke drum through said aperture.

1        2. A coke drum as recited in Claim 1 wherein said deflector is removably connected  
2              beneath said aperture.

1        3. A coke drum as recited in Claim 2 wherein said deflector is removably connected to  
2              said overhead vapor outlet nozzle.

1        4. A coke drum as recited in Claim 3 wherein said deflector is sized to fit through said  
2              aperture.

1        5. A coke drum as recited in Claim 1 wherein said deflector is a planar metal plate.

1        6. A coke drum as recited in Claim 1 wherein said deflector forms a cone having an apex  
2              centered with and pointing toward said aperture in said coke drum.

1           7. The coke drum as recited in Claim 1 wherein said deflector is located at least one foot  
2 (30.5 cm) from said aperture within said coke drum.

1           8.       The coke drum as recited in Claim 1 wherein said deflector is located no farther away  
2           than ten feet (3.05 m) from said aperture within said coke drum.

1           9.       A method of reducing escape of solids and heavy hydrocarbon liquids from a coke  
2       drum having a top portion with an aperture, an overhead vapor outlet nozzle connected to said  
3       aperture, and means for deflecting solids and heavy hydrocarbon liquids from exiting said interior of  
4       said coke drum through said aperture, said method comprising the steps of:

introducing hydrocarbon feed into said coke drum;

venting said coke drum through said aperture; and

reducing said amounts of solids and heavy hydrocarbon liquids from exiting said coke

drum by deflecting said solids and heavy hydrocarbon liquids from said aperture.

1           10. A method as recited in Claim 9 wherein said means for deflecting is removably placed  
2 beneath said aperture.

1           11. The method as recited in Claim 10 wherein said means for deflecting is removably  
2 connected to said overhead vapor outlet nozzle.

1           12. The method as set forth in Claim 9 wherein said means for deflecting includes a flat  
2       planar plate.

1           13. The method as set forth in Claim 9 wherein said means for deflecting includes a cone  
2       with an apex pointing to said aperture.

1           14. A method of reducing escape of solids and heavy hydrocarbon liquids from a coke  
2       drum having a top portion with an aperture, and an overhead vapor outlet nozzle connected to said  
3       aperture, which method comprises:

4                 introducing hydrocarbon feed into said coke drum;  
5                 venting said coke drum through said aperture;  
6                 impinging said solids and liquid hydrocarbons on a deflector plate in said drum to  
7       discourage escape of said solids and hydrocarbon liquids from said coke drum.

1           15. The method of reducing escape of solids and heavy hydrocarbon liquids as set forth  
2       in Claim 14 wherein said deflector plate is a flat planar metal plate.